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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
NICHOLAS WILLIAM ANDERSON : EXAMINER: DANIEL, W.
SERIAL NO: 10/551,620 :
FILED: NOVEMBER 28, 2006 : GROUP ART UNIT: 2617
FOR: APPARATUS AND METHOD FOR :
COMMUNICATING USER EQUIPMENT
SPECIFIC INFORMATION IN CELLULAR
COMMUNICATION SYSTEM

DECLARATION UNDER 37 C.F.R. § 1.132

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

Sir:

Now comes Seiichi Izumi, who deposes and states that:

1. I am an employee of the assignee, Sony Corporation (Sony), of U.S. Patent application 10/551,620, and am presently a member of Sony's Intellectual Property Department located in Tokyo, Japan.
2. Prior to working in Sony's Intellectual Property Department since 2008, I worked in developing GSM handsets and standardization of 3G cellular systems in 3GPP for Sony Corporation, from 1989-2008.
3. I have a Bachelor's Degree in Biological Engineering and a Masters degree (1985) in Biological Engineering from Osaka University.
4. From 1989-1997, I worked for Sony Corporation in the development of wireless GSM handsets.
5. From 1997-2001, I worked in research on 3G systems and beyond 3G telecommunication systems for Sony Corporation.

6. From 2001-2004, I worked in the development of wireless home network utilizing IEEE 802.11 (wireless LAN technologies) and equivalent technologies for Sony Corporation.

7. From 2004-2008, I worked in the development of physical layer specifications with MIMO technology for high-speed wireless networks for Sony Corporation.

8. I consider myself to be one of ordinary skill in the wireless communications art, especially regarding CDMA communication systems.

9. I have reviewed the Office Action of September 21, 2010 and the outstanding Office Action of April 5, 2011 that rejects Claims 1-3, 5-30 and 32 in the subject patent application. I have also read the asserted prior art, namely Cao et al. (U.S. 6,647,005, hereinafter “Cao”), Ozluturk et al. (U.S. 7,710,927), Terry et al. (U.S. 6,587,697, hereinafter “Terry”), Tsunehara et al. (U.S. 7,006,463, hereinafter “Tsunehara”), and Kim et al. (U.S. 7,450,611, hereinafter “Kim”).

10. I have also reviewed the patent specification and presently pending claims.

11. With regard to Claim 1, there are two points that I find particularly relevant with regard to distinguishing the asserted prior art: (1) that the transmitting apparatus in the cellular communications system combines “user specific update control information for a plurality of user equipment”, and (2) forward error correction coding is applied to the combined user equipment specific update control information for the plurality of user equipment. The “update information” is relevant in the context of being combined user equipment specific update information, since the update information is combined for multiple user equipment prior to being sent to the multiple user equipment. Also, forward error correction coding is applied to the combined user equipment specific update information. These features distinguish conventional code division multiple access (CDMA) systems such as WCDMA, that transmit update information from a base station to user equipment on a rapid basis (about 1,500 times per second or higher) without forward error correction being

applied. In these conventional systems, the rapid issuance of update information is needed to assist in maintaining uniform signal reception levels at the base station of received user equipment transmissions so as to avoid any stronger transmissions from suppressing weaker ones. Moreover, by maintaining uniform received signal power levels from the different user equipment, the lack of complete orthogonality between the transmissions from the user equipment can be mitigated so as to avoid co-channel interference issues and suppression of weaker received signals. In the industry this is typically known as the “near-far problem”.

12. Because the base stations send the update information very frequently, the user equipment would be subject to significant processor loading if the user equipment was required to error correction decode the update information 1,500 times per second. Generally it is believed that no forward error correction is required because if one of the update control items is received in error, a next one will quickly inform the user equipment of the correct update information.

13. For these reasons above, conventional CDMA systems such as WCDMA systems do not send update information with forward error correction because any attempt to do so would greatly complicate user equipment processing load budgets. Nor would one of ordinary skill in wireless communication art consider it a logical thing to do.

14. Cao describes a WCDMA system that multiplexes packet data onto a single channel. Consistent with conventional WCDMA systems, control information is transmitted in every slot (column 4, lines 6-7). I recognize (see, e.g. cover figure) that no forward error correction coding is applied to the control information, as is evident from the absence of any description otherwise, and that each user equipment is provided with two data bits and no redundancy bits. Forward error correction coding is effective at correcting transmission errors because it takes advantage of redundant information used when encoding the raw information. I understand Cao to describe an otherwise conventional WCDMA system, that

combines some control information but sends the control information at the same rapid rate of a conventional WCDMA system, and without forward error correction coding. Modifying Cao to incorporate forward error correction of the update control information would make it more challenging to accomplish the stated goal in Cao to “quickly adjust” the uplink power (col. 4, line 34).

15. The outstanding Office Action also asserts Ozluturk (U.S. 7,710,927) as describing forward error correction applied to update control information. The Office Action cites for support the description at column 11, lines 27-46.

16. In my review of Ozluturk, I do not see anything that would teach or suggest applying forward error correction coding to update control information. In my review of Ozluturk, Ozluturk is no different than Cao in that it still relies on very fast update rates for the power control information. In fact, Ozluturk describes at column 5, lines 40-43 that the system operates at an update rate of at least 16 kHz (i.e., 16,000 per second). Thus, Ozluturk is no different from Cao, in that forward error correction would not reasonably be applied to the update control information because it would place too much of a burden on processing resources since the update rate is so quick, and because there is no need to correct for errors if the next transmission is just 1/16000 seconds away in time.

17. Column 11, lines 39-41, which is cited in the outstanding Office Action, does not refer to forward error correction for the control channels, but rather relates to forward error correction regarding traffic channels. This becomes even more apparent from the description at column 4, lines 25-35, which explains that the use of forward error correction is for traffic channels, and never suggests being applicable to power control information.

18. Terry was cited in an earlier Office Action of September 21, 2010 and is also directed to a CDMA system that would also manage the power levels of user equipment transmissions as received by a base station. Although the September 21, 2010 Office Action

refers to column 4, lines 1-4 for example in Terry as being relevant, this language in Terry describes the combination of quality margin QM information and interference output information (Icc) that can be encoded into a single parameter. However, I also view this description as merely combining the data into a single parameter, without forward error correction coding. Also, the expressed purpose in the language cited by the Office Action is to further reduce the downlink signaling overhead. If forward error correction were applied, it would increase the overhead since redundancy would be added to the transmitted information. Accordingly, I do not view Terry as teaching combined update information that is subjected to forward error correction coding. Moreover, subjecting the QM and Icc in Terry to forward error correction coding would be contrary to the stated objectives stated in Terry.

19. On page 16 of the outstanding Office Action and in the September 21, 2010 Office Action, the Office cites Tsunehara (against original Claim 6) for the purpose of applying forward error correction coding. I note that Tsunehara does not discuss the update information having forward error correction coding applied thereto. Once again, it is the rapid transmit of the update information, in combination with the forward error correction, that would be unsuitable for systems like Cao, Terry, and Tsunehara.

20. Likewise, Kim is merely asserted for its disclosure of high speed downlink packet access service, but otherwise is not relevant to the amended claims nor does it address the encoding feature that is absent from the other asserted references.

21. After reviewing the applied prior art references, I do not find anything in any of them that would teach or suggest what has been added to each of the independent claims in the present application.

22. The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are

believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

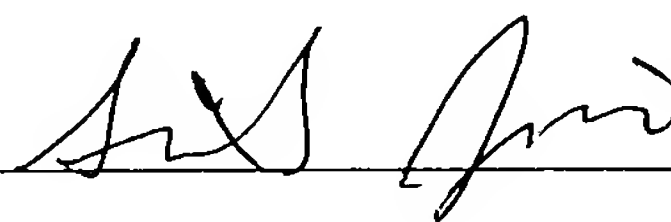
23. Further deponent saith not.

Customer Number

22850

Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 11/10)

Signature



Date

19. July. 2011